CLAIMS

1. An acceleration sensor for detecting an acceleration, comprising:

a vibrator;

a weight portion that is connected to the vibrator, and supported at a position different from the center of gravity of the vibrator plus its own structure; and

a detecting section which detects the amount of characteristic corresponding to an angular moment that is exerted in the vibrator upon application of an acceleration in one direction to the vibrator and the weight portion.

2. The acceleration sensor according to claim 1, wherein the vibrator is provided as a torsion vibrator made by a piezoelectric element, and the amount of characteristic is a voltage in the torsion vibrator corresponding to the angular moment.

3. The acceleration sensor according to claim 1, wherein the vibrator comprises two piezoelectric elements which are mechanically connected each other and are subjected to sliding deformation.

4. An acceleration sensor for detecting an acceleration, comprising:

a vibrator;

a weight portion that is connected to the vibrator, and supported at a position different from the center of gravity

of the vibrator plus its own structure; and

a detecting section which detects a Coriolis force that is caused by a rotation angular velocity exerted in the vibrator upon application of an acceleration in one direction to the vibrator and the weight portion while the vibrator is vibrating in a constant direction.

5. The acceleration sensor according to claim 4, wherein the rotation axis of the rotation angular velocity is set in the same direction as the detection axis of the Coriolis force.

6. The acceleration sensor according to claim 4, wherein at least one portion of the weight portion is formed as an elastic member.

7. An acceleration sensor for detecting an acceleration, comprising:

a first sensor having a first vibrator supported at a position, with the center of gravity thereof being different from the position at which the first vibrator is supported, wherein, upon application of an acceleration in one direction, a rotation angular velocity is exerted in the first vibrator;

a second sensor having a second vibrator supported at a position, with the center of gravity thereof being the same as the position at which the second vibrator is supported, wherein, upon application of an acceleration in one

direction, no rotation angular velocity is exerted in the second vibrator; and

a differential detector which detects a difference between outputs of the first sensor and the second sensor.

8. The acceleration sensor according to claim 7, wherein the rotation axis of the rotation angular velocity of the first sensor and the rotation axis of the rotation angular velocity of the second sensor are set in the same direction.

9. The acceleration sensor according to claim 7, wherein the characteristic of the first vibrator and the characteristic of the second vibrator are coincident with each other.

10. The acceleration sensor according to claim 8, wherein

the characteristic of the first vibrator and the characteristic of the second vibrator are coincident with each other.

11. The acceleration sensor according to claim 7, wherein

a plurality of sets each of which comprises the first sensor, the second sensor and the differential detector are provided.

12. The acceleration sensor according to claim 8, wherein

a plurality of sets each of which comprises the first sensor, the second sensor and the differential detector are provided.

13. The acceleration sensor according to claim 9, wherein

a plurality of sets each of which comprises the first sensor, the second sensor and the differential detector are provided.

14. The acceleration sensor according to claim 10, wherein

a plurality of sets each of which comprises the first sensor, the second sensor and the differential detector are provided.

15. The acceleration sensor according to claim 11, wherein

three sets each of which consists of the first sensor, the second sensor and the differential detector are provided, the sets being arranged so that the detection directions for acceleration in the respective sets are made orthogonal to each other.

16. The acceleration sensor according to claim 12, wherein

three sets each of which consists of the first sensor, the second sensor and the differential detector are provided, the sets being arranged so that the detection directions for

acceleration in the respective sets are made orthogonal to each other.

17. The acceleration sensor according to claim 13, wherein

three sets each of which consists of the first sensor, the second sensor and the differential detector are provided, the sets being arranged so that the detection directions for acceleration in the respective sets are made orthogonal to each other.

18. The acceleration sensor according to claim 14, wherein

three sets each of which consists of the first sensor, the second sensor and the differential detector are provided, the sets being arranged so that the detection directions for acceleration in the respective sets are made orthogonal to each other.